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ABSTRACT

A survey of Queensland's population in 1993 determined that 24% of the adults were smokers. National data compiled in 1992 indicated that 72% of the drug-related deaths were related to tobacco use. In light of the need for effective smoking cessation approaches, a literature review was undertaken to determine the efficacy of hypnotic and non-hypnotic, uni-modal and multi-modal approaches to smoking cessation. The review begins by contrasting hypnosis and cognitive-behavioral therapies. Therapies include self-quitting; primary care interventions; mass media interventions; legislative measures; and community-based interventions. A discussion is also included on motivational interviewing; brand switching; withdrawal management; stimulus control; aversion procedures; social support; stress management; exercise; and relapse prevention representing uni-modal non-hypnotic treatments. Other approaches are examined that belong to the same category as nicotine replacement strategies and acupuncture. The review explains the research difficulties in comparing the efficacy of treatments due to factors such as the adequacy of the delivery of procedures, small number of subjects, and comparison of slightly modified versions of the same technique. It concludes that a meta-analytic study would be able to solve some of the evaluation problems that occurred. (Contains 130 references.) (JDM)

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SMOKING CESSATION: UNI-MODAL AND MULTI-MODAL HYPNOTIC AND NON-HYPNOTIC APPROACHES

by
Manuela H. Habicht, Ph.D.

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Preface

Writing this dissertation has been an interesting, demanding and satisfying project. My partner Christian made it possible in many direct and indirect ways.

I am very lucky to have someone so wonderful in my life.

He is a powerful non-smoker.

Sue Perry and Paul Matsukis shared their time and views presenting these results at the

6th European Congress of Psychology in Rome, Italy 1999

and at the

57th Annual Convention of the

International Council of Psychologists in Boston, MA 1999.

Thanks, everybody, for everything.

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ABSTRACT

In 1993 the Regional Health Survey found that 24 % of Queensland's population were current smokers, with males (28%) more likely to smoke than females (20%). Data compiled by the Australian Bureau of Statistics concerning drug caused deaths indicate that of the estimated 26,500 drug related deaths in 1992, tobacco accounted for over 72%.

This review examines efficacy of hypnotic and non-hypnotic, uni-modal and multi-modal smoking cessation approaches. The author contrasts different definitions of hypnosis and cognitive-behavioural therapy. Intervention methods that are reviewed include self quitting, primary care interventions, mass media interventions, legislative measures and community-based interventions. Motivational interviewing, "setting a quit date", brand switching, withdrawal management, stimulus control, aversive procedures, social support, stress management, exercise and relapse prevention representing uni-modal non-hypnotic treatments are reviewed, too. Other approaches that belong to the same category such as nicotine replacement strategies and acupuncture are examined as well. Multi-modal non-hypnotic approaches are compared with multi-modal, hypnotic cessation strategies.

The author elaborates on difficulties comparing the efficacy of treatments due to a number of factors including the adequacy of the delivery of procedures, small number of subjects, comparison of slightly modified versions of the same technique instead using the more standard control groups and suggests a meta-analytic study to overcome shortfalls of the current review.

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1. Introduction

The prevalence of tobacco smoking in Australia has decreased over the period from 1977 to 1995. Smoking rates for adult Queenslanders fell from 36 % to 25 %, reflecting the trend for Australia as a whole (Australian Bureau of Statistics, 1992). In 1995, 25 % of the Queensland population (14 years and over) were current smokers, which was similar to the national average (26 %) (National Drug Strategy, 1996).

Demographic characteristics of Queensland adult smokers (18 years and over) were last recorded in the 1993 Regional Health Survey which found that 24 % of the population were current smokers, with males (28 %) more likely to smoke than

Table 1. Characteristics of adult [a] smokers in Queensland 1993.

Characteristics Category	Estimated number of smokers in each category	%age of smokers in each category
Males		
18-30	100,800	35
31-50	122,200	30
51-70	50,100	22
70+	11,400	15
Females		
18-30	86,800	30
31-50	88,300	22
51-70	33,200	14
70+	3,400*	3*
Marital status		
Married/de facto	312,800	22
Separated/divorced/widowed	63,200	30
Single/never married	119,300	31
Country of Birth		
Australia	393,800	24
Other English speaking country	59,800	26
Non-English speaking country	39,600	26
Employment status		
Employed/full time	316,600	27
Unemployed	36,600	47
Home duties	70,000	21
Student part/full time	14,000	19
Annual level of income		
<$10,000	43,400	21
$10 - 20,000	76,300	24
$21 - 40,000	126,700	24
$41 - 60,000	71,400	24
>$60,000	39,700	19

[a] 18 years and over

Caution - Estimate has a relative standard error of between 25 % and 50 %.

Source: Epidemiology and Health Information Branch. Regional Health Survey. 1993.

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females (20 %) (Epidemiology and Health Information Branch, Queensland Health, 1993).

Table 1 shows that for both sexes, as age increases the proportion of smokers decreases. More unmarried people were smokers compared with those who were married or in de facto relationships. Differences in proportions of smokers are only very slight when analysed according to country of birth. Employment status is strongly linked to smoking - the prevalence of smoking was highest among those who were unemployed (see Table 1).

Level of income appears to have little impact on whether or not an individual chooses to smoke. Smoking rates were the same for those in various income levels between $ 10,000 and $60,000.In 1996, the Commonwealth government commissioned a report, The Social Costs of Drug Abuse in Australia, to analyse the social cost of drug abuse in Australia.

The definition of the economic costs of drug abuse adopted by Collins and Lapsley (1996, p.3) is "The value of the net resources which in a given year are unavailable to the community for consumption or investment purposes as a result of the effects of the past or present drug abuse, plus the intangible costs imposed by this abuse". It is mentioned in a summary by Scollo, M (1996) that the net cost of providing extra medical services extra hospitalisations and extra nursing home care for smokers (over and above that which could be expected were these people lifelong non-smokers) were $646.7 millions in 1992.

Data compiled by the Australian Bureau of Statistics concerning drug caused deaths indicate that of the estimated 26,500 drug related death in 1992, tobacco accounted for over 72 % (19,000 deaths) (The Drug Data Series, 1994).

Because smoking has such a significant impact on society the author of this dissertation intends to provide a comprehensive review of the smoking cessation treatment-outcome literature. The review covers multi-modal approaches such as the comparison of cognitive-behavioural methods including and excluding hypnosis as well as uni-modal approaches.The review discusses the hypothesis that multi-modal

cognitive-behavioural interventions that include hypnosis have a higher smoking cessation rate than those without hypnosis. It also discusses the second hypothesis that the smoking cessation rate in multi-modal approaches is higher than in uni-modal approaches after the termination of treatment. In both cases the review tends to look at different follow-up period after the treatment is terminated.

1.1. The Definition of Hypnosis

To compare different approaches it is at first necessary to clearly define some of the concepts used. Hypnosis derived from the Greek word "hypnos" meaning sleep.

Edmunds (1977) agreed on that concept declared hypnosis to be identical with normal sleep. The only difference pointed out was the subject's heightened suggestibility (Edmunds, 1977). According to Pavlov's view of hypnosis various hypnotic phenomena were examples of conditioned reflexes, but hypnosis in general can be equated with sleep (Edmunds, 1977). Pierre Janet referred to hypnosis as a condition of mental dissociation in which part of the field of consciousness could break away. This part would then form a secondary personality (Edmunds, 1977).

Hypnosis can also be defined as a goal directed striving to please the hypnotist. Sandor Hypnosis as seen by Wolberg (1954) is the result of the subject's need or desire to return to infancy, with the hypnotist taking the place of one of the parents. The above definition followed the early psychoanalytic considerations in which the hypnotic state was looked upon as a regression or retrogressive state resulting from an archaic transference relationship.

Hypnosis can be characterised as a state, in which all active opposition of the 'outer mind' is eliminated , with the result that any suggestions given by the hypnotist have direct access to this 'inner mind', which, subject to certain limitations, accepts and acts upon these (Cudden, 1955). Cudden (1955) described two aspects of the mind: the 'inner'- a true controlling and driving force; while the 'outer' is a small conscious part of the 'inner' and functions as a superior which uses intelligence to direct forces at its disposal. In general he refers to what is commonly known as the conscious-

subconscious mind interactions.

Hypnosis is also viewed as an altered state of consciousness, in which a subject has much enhanced capacity for 'suggestibility' or acceptability' and that it is this innate capacity which makes possible for the transition to the altered state of hypnosis (Hilgard, 1965). Hilgard's theory represents the neodissociation interpretation of hypnosis that arose through hypnotic experimentation. It was not limited to those who show symptoms of pathological dissociation and constitutes a general model of cognitive functioning. Hilgard explains hypnotic responsiveness through somewhat reduced influence of executive ego control (Hilgard, 1991).

Nash (1991) presented a psychoanalytic theory of hypnosis that discusses the special case of psychological regression. He refers to Freud who distinguished two types of psychological regression – "temporal" and "topographic". Temporal regression is explained as the progression from less organised structures to more complex, advanced structures during maturation. Topographic regression is also a reversal of the postulated neural excitation flow from sensory and perceptual neural structures to higher level thought and response structures. Nash (1991, p. 175) therefore explains hypnosis as "a condition during which a subsystem of the ego undergoes a topographic regression, resulting in characteristic changes in the experience of self and others". He stated that the regression in hypnosis is topographic, but not temporal. He relates changes in behaviour, experience, and relationship observed in hypnosis to manifestations of a shift in how the subject processes information.

Penrose reported that it is still difficult to define hypnosis because it involves multifaceted dimensions; namely, it is both a condition as well as a method (F. Penrose, 1985). He views hypnosis as a normal state of mind "which involves the capacity for altered states of consciousness, which enhances a strong emotional desire to adhere suggestions emanating from either the 'self' or some other person; and it is this capacity to alter the state of consciousness which enables the manipulation of many basic variables such as motivation, perception, and the full range of ideational and emotional reactions" (Penrose, 1985, p. 98).

Greenleaf (1974) discussed the need to define hypnosis during hypnotherapy and points out that a patient may find the hypnotic experience promoted by the hypnotherapist fearful. He points out that the patient's expectations, "whether conscious or unconscious, may either impede or expedite therapy" (Greenleaf, 1974, p.120).

Greenleaf's view is closely connected to Coe and Sarbin's "Role Theory". The theory was originally formulated in 1950 and included three contextual variables: favourable motivation, accuracy of role perception and performance skills (Sarbin, 1950). In 1956 Sarbin identified six variables that influenced the quality of role enactment: role expectations of the subject, the accuracy of the subject's locating of self in the miniature social structure, motoric and imaginal skills, role demands generated by specific features of the experimental or clinical situation, the congruence of the hypnotic role with the subject's self-conceptions, and the guiding and reinforcing properties of the subject's audience. This socio-psychological theory developed out of a growing dissatisfaction with the popular theories. Those popular theories interpreted hypnotic phenomena within metapsychological frameworks supporting such concepts as trance, mental states, animal magnetism and so on. Following the sociocognitive perspective of Sarbin and Coe, Spanos' view of hypnotic responding is based on the notion that "people are sentient agents involved in organising sensory inputs into meaningful categories or schemas that are used to guide actions" (Spanos, 1991, p. 326). His view of role enactment focuses on the way actors are defining the situation and their definition of behaviours that are considered appropriate to that definition of the situation. Spanos refers to hypnosis as historically rooted conceptions that are held by participants in the minidrama that is labelled "hypnotic situation". He explains individual differences in hypnotisability to a substantial degree "as a reflection of stability in the attitudes, expectations, and interpretations that subjects bring to or develop in the hypnotic test situation" (Spanos, 1991, p. 329).

Lynn and Rhue (1991) see hypnosis as a social behaviour. They argue that hypnotic

behaviours have many parallels with familiar behaviours in cooperative settings characterised by scripted, asymmetric relations among participants (eg. psychotherapy). They describe actions as voluntary and goal directed to regulate needs and intentions. It is argued that those actions can progressively change to reality goals.

Bartlett (1968) proposed a definition of hypnosis with a theory of its mechanism of action. He defines hypnosis as a "spontaneous or deliberate control of the organism's autoregulated input of sensory signals for the control of behaviour" (Bartlett, 1968, p. 69). He refers to the full complement of incoming signals from the internal or external environment in relation to sensory signals and refers to all outgoing messages that lead to physiological or psychological performance in reference to behaviour.

Orne (1974) has proposed a major defining characteristic of hypnosis - that the person, while hypnotised, will often manifest gross anomalies, paradoxes, and glaring errors in his or her performance. This emphasis on gross anomalies represents a development of an earlier position in which Orne pointed to various inconsistencies in the age regressed person's behaviour as equally indicative of the uniqueness of the hypnotised subject's internal processing.

Barber (1991) raised in his discussion on the Locksmith Model the question whether hypnotic responsiveness is a stable trait of the individual, or it is a cluster of capacities that sometimes is difficult to be accessed. He refers to the therapeutic relationship and the hypnotherapeutic setting as means of "unlocking" a capacity for hypnotic responsiveness. He compares human's consciousness-altering "mechanisms" with a mechanical lock. It illuminates the similar process of assessing characteristics to determine what kind of key will be successful.

Lynn and Malinoski (1994) referred to hypnosis as a term that is used in different ways by different theorists, researchers and clinicians. In their view a definition of hypnosis should "break with the tradition of viewing hypnosis as an altered state of consciousness and emphasis instead procedures and the diversity of subjects' responses to them" (Lynn & Malinoski, 1994, p. 149).

In 1995 Fellows commented on the definition and description of hypnosis that was written by an ad hoc committee of the Division of Psychological Hypnosis of the APA under the chairman of Dr. Irving Kirsch. 14 leading international authorities in the field of hypnosis, including Kenneth Bowers, John Chaves, William Coe, Edward Frischholtz, Melvin Gravitz, Richard Horevitz, Stanley Krippner, Steven Lynn, Michael Nash, and Nicholas Spanos were members of the committee. Because hypnosis is an area of much controversy and misunderstanding, such a statement of the American Psychological Association (APA) on the current state of knowledge and opinion as well as its clinical applications was important. The Executive Committee of the APA, Division of Psychological Hypnosis defined hypnosis as follows:"Hypnosis is a procedure during which a health professional or researcher suggests that a client, patient, or subject experience changes in sensations, perceptions, thoughts or behaviour. The hypnotic context is generally established by an induction procedure. ...People respond to hypnosis in different ways. Some describe their experience as an altered state of consciousness. Other describes hypnosis as a normal state of focused attention, in which they feel very calm and relaxed. ...Contrary to some depictions of hypnosis in books, movies or on television, people who are hypnotised do not lose control over their behaviour...Hypnosis is not a type of therapy, like psychoanalysis, or behaviour therapy. Instead it is a procedure that can be used to facilitate therapy. ..." (Fellows, 1995, p. 75).

A survey by the British Society of Experimental and Clinical Hypnosis (BSECH) let to the conclusion that the above definition represented a good compromise between state and non-state orientations. It was criticised that the statement failed to respond to the question about measurements of hypnotic susceptibility and their relevance for therapeutic outcome. Another criticisms was that "The definition confuses the therapist's activities with the patient's experiences" (Fellows, 1995, p. 77). This criticism draws on whether hypnosis is a procedure or an effect.

In the 1960's Barber attacked the state concept and the state-non state debate is still ongoing (Barber, 1969). The APA definition also includes a statement that people who

have been hypnotised do not lose control over their behaviour which clearly contradict the traditional notion that hypnotic responding is basically involuntary. If it is then assumed that hypnotic responding is voluntary it is difficult to explain why subjects fail to remember what had happened during hypnosis following suggestions for amnesia. Kirsch (1994) did not consider the APA definition a finished product. He pointed out his desire to include Kihlstrom's suggestion that all hypnosis is really self-hypnosis as well as his criticisms on the inclusion of the parenthetical reference to clinical psychologists as an example of health care professionals. In his view it could be interpreted as an exclusion of physicians, dentists or other health care providers.

Gregg (1994) also provided a critical comment on the APA definitions of hypnosis and pointed out that it is not a scientific one or intended to provide a working definition for clinicians. He points out that by using the definition of hypnosis as a procedure the committee failed to deal with difficulties arising when references would have been made to effects or mechanisms. In fact one of the critics referring to the survey of British opinions on the APA definition pointed to the fact that hypnosis was actually an effect (ie. a state of mind) produced in people by a variety of procedures as reported by Fellows (1994).

Another question that was raised in the context of labelling hypnosis as a procedure (an antecedent variable) was: What makes a procedure 'hypnotic'? Fellows (1994) continues to criticise by pointing out that the question of whether an induction is necessary to label a procedure as hypnotic is still unclear. He argues that the statement failed to distinguish clearly between the experience of hypnosis and the degree of responsiveness to hypnotic procedures. He reported that the APA statement also failed to distinguish between who actually uses hypnosis and who should use it.

In relation to whether an induction is necessary to label a procedure as hypnotic Pavia & Stanley (1988) presented a study that dealt with the definition of induction as hypnosis or relaxation. The result is in contrast to earlier studies by Lazarus (1973) and clearly demonstrates that the responses of subjects lacking strong expectations for either technique were not affected.

In relation to relaxation it was argues by Edmonston (1981) that it historically, clinically, experimentally and physiologically precedes and forms a fundamental basis of subsequent phenomena associated with the term hypnosis. He concluded, "The relaxation of hypnosis is prerequisite to all the theories in the field. The relaxation precedes, must come first, before various theoretical explanations can begin to weave their hypothetical webs..." (Edmonston, 1981, p. 210). He refers to anesis as a two step process that includes relaxation followed by fluctuating levels of alertness dictated by activity requirements or subsequent suggestions. He points out that anesis is characterised by hypersuggestibility, spontaneous amnesia and the subjective impression of nonvoluntariness.

Chaves (1994) also discussed the APA's definition. It is his opinion that the definition is theoretically neutral and operations in thrust by including a "straightforward account of well established empirical observations" and avoiding unsubstantiated claims (Chaves, 1994, p. 143). Chaves (1994) also underlines the APA's differentiation between hypnosis and psychotherapy. He points out that it also deemphasises and demystifies induction procedures and acknowledges individual differences.When discussing the context between hypnosis and psychotherapy Milton Erickson needs to be mentioned.

Zeig and Rennick (1991) refer to him as the father of an interpersonal communications approach to hypnosis and psychotherapy. They describe Erickson as someone who originated and developed a hypnotherapy "whose essential feature is not formal trance, which may or may not be employed, but rather an interpersonally focused communication system unique to the individual involved..." (Zeig & Rennick, 1991, p. 275). Zeig proposed that hypnosis could be defined from the client's perspective in a subjective or phenomenological way. Zeig (1988) suggests the following three definitions of hypnosis from the perspective of the observer, the patient, and the therapist:

1. Hypnosis is a context for effective influence communication (observer's position).

2. Hypnosis can be experienced as a state of focused awareness on whatever is immediately relevant, in which previously unrecognised psychological and physiological potentials are accessed to some avolitional extent (client's position)
3. Hypnosis is conceived of as a dissociative responsiveness to injunction in a context defined as hypnosis.

Zeig & Rennick did not see the need for a single definition of hypnosis. This is explained by it being a multifaceted phenomenon entailing a system of interactions between people.

1.2. The Definition of Cognitive-Behavioural Therapy

Cognitive therapy is a relatively recent approach when compared to more traditionasl approchaes such as psychoanalysis. The cognitive revolution in psychotherapy occured in the late 1960s leading to CBT being a mainstream psychotherapy tradition.

A University of Pennsylvania psychiatry professor, Aaron Beck (1976), developed it. Beck believes that cognitive processes influence behaviour and that overt behaviour and emotional expression can be changed by cognitive interventions. Specifically, cognitive therapy aims at altering underlying assumptions that influence a client's perceptual view, which leads to negative automatic beliefs and dysfunctional cognitions on which behaviour is based. In cognitive therapy, the clinician helps the client to understand and then to modify automatic thoughts, dysfunctional cognitions, and core maladaptive schemas. Behaviour therapy has been defined as "(1) the use of a broadly defined set of clinical procedures whose description and rationale often rely on the experimental findings of psychological research, and (2) an experimental and functionally analytic approach to clinical data, relying on objective and measurable outcomes" (Craighead, Kazdin & Mahoney, 1976, p. 19).

The behaviourists of both classical and operant conditioning models excluded any reference to mediational concepts (such as the role of thinking processes, attitudes and values). Since the 1970s the behavioural movement has conceded a legitimate

place to thinking, even to the extent of giving cognitive factors a central role in the understanding of and treating of behavioural problems (see Beck 1976; Beck & Weishaar, 1989; Mahoney 1977, 1979).

According to Franks (1987), cognitive-behavioural therapy is now established as a part of mainstream behaviour therapy.

2. Intervention Methods

2.1. Self quitting

Dijkstra, Vries & Bakker (1996) investigated the role of stages of change in smoking cessation for Dutch smokers. They found that people in different stages such as precontemplation, contemplation, preparation, action and maintenance differed on expected outcome and self-efficacy. Their study showed that smokers in the contemplation stage anticipated more pros of quitting than smokers in the precontemplation stage, "whereas they did not differ in self-efficacy expectations" (Dijktra, Vries & Bakker; 1996; p. 761).

Cohen et al. (1989) examined data from 10 long-term prospective studies in relation to key issues about self-quitting of smoking. They found that when individuals reported a single attempt to quit, self-quitter's success rates were no better than those reported for formal treatment programs. They assumed that a single attempt to quit smoking is a poor predictor of the probability of quitting smoking over a lifetime. They conclude that quitting smoking is a dynamic process and suggest that smokers should be tracked for several years with data on their changes in smoking status to achieve a better understanding of the process.

Schachter (1990) criticised Cohen's study for having chosen 10 studies that used highly biased self-selected samples. Schachter (1990) assumes therefore that no inferences can be drawn about the prevalence of self-cure in the general population.Cohen (1990) responded to that criticism and defended his choice of sample by stating that the characteristics of the samples were "consistent with characteristics of persons concerned with heath and health practices" (Cohen, 1990,

p. 1391). He elaborates on the fact that having fewer men than women in the sample is consistent with data reporting that men have shown greater failure to follow standard health practices, report symptoms, and visit physician than have women.

Engles et al. (1998) examined longitudinal predictors of smoking cessation among adolescents aged 14-15. The authors conducted three waves of interviews, each 3 years apart focusing on predicting unaided smoking cessation based on assessment of the stage of change, quit attempts, smoking history, smoking context, attitude, self-efficacy and social influences. Adolescents were grouped into precontemplators, contemplators and preparators. Results indicated that 68% of prepared smokers reported a successful quit attempt compared with 62% of the contemplators and 40% of the precontemplators. Results further demonstrate that preparators smoked fewer cigarettes than precontemplators did. There was no significant difference between precontemplators and contemplators in relation to the amount of cigarettes smoked. The authors found that precontemplators were more likely to hold a positive attitude toward smoking and lower levels of confidence in cessation efforts than those who were preparing to quit or have actually quit 3 years later. In general Engles et al. (1998) concluded that differences in cognitions in the first phase were related to the stages 3 years later. They further point out that the intensity and frequency of smoking affected the motivation to quit 3 years later. They concluded that adolescents' motivation to quit is affected by smoking-related cognitions and habitual factors.

2.2. Primary Care Interventions

Much primary care intervention deal with smoking prevention practices. To make smoking prevention successful, so that ideally there is no cessation therapy necessary, those involved as practitioners should be able to clearly identify adolescents "at risk". Gregorio (1994) demonstrates in a survey that most practitioners were not able to estimate the cigarette use among their adolescent patients and engaged in prevention counselling infrequently. The results highlighted the need for continuing training of

primary health care practitioners about the importance of the counseiling process. Thompson et al. (1988) tested 3 intervention for smoking cessation in 953 patients seen in routine primary care practice. They compared physician counselling, mailed letters and educational material and referral to smoking cessation classes. They found that none of the interventions increased quitting as determined 8-9 months later by self-report. . However when physician counselling was combined with a letter of encouragement and self-help smoking cessation material mailed 14 days after encounter it "appeared to double the odds (odds ratio 1.93-2.03) that smokers in routine ambulatory care will engage in some type of antismoking behaviour (quit, quit and relapse, or cut down) during the ensuing 10 months" (Thompson et al., 1988, p. 73). The study stands as example of most studies conducted in primary care setting. It does not focus on efficacy, but can be seen as an effectiveness study.

2.3. Mass Media Interventions

Bauman et al. (1991) investigated the influence of three mass media campaigns on variables related to adolescent cigarette smoking and presented the result of a field experiment. The mass media campaigns were designed to prevent cigarette smoking by adolescents and featured radio and TV messages on expected consequences of smoking and a component to stimulate personal encouragement of peers not to smoke. One campaign used eight 30-second radio messages, the second campaign used a 60-second radio message and the third campaign was similar to the second but included television broadcast. The study concluded that the radio campaign had a modest influence on the expected consequences of smoking and friend approval of smoking, the more expensive campaigns involving television were not more effective than those with radio alone. Campion et al. (1994) evaluated the effects of a mass media campaign on smoking and pregnancy. The campaign highlighted the importance of smoking cessation and hazards of smoking during pregnancy, as opposed to cutting down. The survey included a total of 1232 pregnant women (625 before and 607 aftei delivery). Three advertisements, foetus, Incubator and bin were chosen. 11

advertisements were placed and the campaign lasedt for 10 days with a coverage ranging from 23.3 million readers to 34.9 millions readers depending on the advertisement. The result demonstrated no significant changes in the pre- and post-samples. However, a number of shifts were apparent, meaning a significant decreased in the numbers claiming to smoke 20 or more cigarettes a day (from 25% to 15%) and a corresponding though non-significant increase in those claiming to smoke 10-19 cigarettes per day (from 41% to 50%).

2.4. Legislative Measures

Hu et al. (1994) investigated the impact of California Proposition 99, which is a major anti-smoking law on cigarette consumption. The law increased the tax on cigarettes and other tobacco products by 25 cents from 10 cents to 35 cents per pack. The increased funds were distributed to health education, hospitals and physicians, research and parks, recreation and environmental programs. Data were collected over a time period of of 7 years including 36 months after the implementation of the *Proposition 88* tax. To eliminate seasonal variation time-series analysis was used. The analysis showed a continuous decline in per capita cigarette consumption since 1984. The immediate effect of *Proposition 88* was very large: 2 packs or a 25,7 % decline reduced per capita sales in January 1989. Six months later the effect decreased to 0.94 packs or 10.9 % and by the end of 1989 and throughout 1991, per capita sales declined by 0.75 packs or 9.5 %. . The findings from the study show that the law was effective in reducing cigarette consumption. The first effect, a temporary 16 % decline in consumption eroded quickly, but an additional long-term effect, a 9 % decline persisted throughout the next three years.Staff et ai. (1998) investigated the question whether non-prosecutory enforcement of public health legislation reduces smoking among high school students (year 7 to 11). The study targeted tobacco retailers who did not comply with obligations under section 59 of the NSW Public Health Act 1991. Control and intervention regions were defined geographically. The analysis demonstrated that there was only a significant effect in reducing smoking

prevalence among year 7 students In general the analysis failed to demonstrate a positive impact from the campaign that included sending 357 education kits addressing local retailers obligations under the above act. However the study also highlights the high level of under age smokers and the difficulties in restricting access in a region with a large metropolitan setting.

2.5. Community-based Interventions

Vanoss et al. (1994) investigated the effects of community intervention to change smoking behaviour among Hispanics. They evaluated the effects of the Programa Latino para Dejar de Fumar that followed two objectives: (1) to increase motivation to quit and (2) to provide information about how to quit. The culturally appropriate messages targeted Spanish-speaking Hispanic smokers with culturally appropriate message about smoking risks and cessation benefits through electronic and print media. A specially-prepared cessation manual was distributed and a $500 prize was raffled every six months to smokers who signed up and proved they had quit smoking 7667 Hispanics answered the survey within four years of the study. The results concluded that recent smoking cessation was not associated with exposure to the intervention as defined and measured. The study can be criticised because it was an uncontrolled community intervention. However positive associations of exposure were found among smokers. These included behaviours that may lead to cessation. Higher exposure to the intervention was associated with attempting to quit, smoking fewer cigarettes per day, and knowing where to obtain written cessation intervention material and others.

Darity et al. (1997) conducted a multi-city community based smoking research intervention project in the African-American population to determine the most effective education intervention. 2544 randomly selected adult Afro-Americans were included who resided in four sites of northeastern and southeastern parts of the United States. Intervention was divided into active (including community organising strategies, direct interpersonal education activities, and mass media) and passive

interventions (use of mass media only). A final eighteen month follow-up survey showed that more direct face-to-face contact and community-based action activities which involve residents of the community working with the intervention staff were perceived as an effective way to intervention.

2.6. Uni-modal, Non-hypnotic Cognitive-behavioural Cessation Strategies

2.6.1. Motivational Interviewing

Colby et al. (1998) tested the feasibility and efficacy of a brief smoking intervention for adolescents in a hospital setting using brief motivational interviewing. None of the subjects were seeking smoking treatment but were considered eligible for the study when they reported having smoked within the past 30 days. Subjects were randomly assigned to a baseline assessment or a motivational interview group. Clients undergoing the baseline assessment were given the information discussed during the motivation interview in writing and were encouraged to stop smoking. A 3-month in-person follow-up interview was conducted, demonstrating that overall two thirds of the adolescents had made a serious quit attempt. A significant reduction in smoking rate and dependence was found. There were no significant group differences between the baseline assessment and the motivational interview group, but the effect size found support for the potential efficacy of the motivational interview. It has to be pointed out that results have to be seen as limited because of the small sample size (40 participants), the short follow-up period, and the potential bias in self-report measures. The results suggest that despite the shortfalls motivational interviewing might have a role in the treatment of this target group that otherwise might not receive any intervention at all.

2.6.2. Setting A Quit Date

Lichtenstein & Cohen (1990) have investigated unaided smoking cessation attempts. The authors compared subjects that quit by themselves with those that were given the aid of brief, written material. Subjects were recruited using the cooperation of a

major voluntary organisation (American Lung Association of Western Pennsylvania). Subjects had to self-monitor for 7 days and mail the record form to the organisation. The program was advertised through public service announcements and the subjects contacted the organisation by phone. Subjects were mailed a self-quitting booklet, which featured a tapering down procedure as well as a second booklet including standard quit tips. Follow-up interviews were conducted via phone 1, 2, 3, 6 and 12 months after the mail-out. Monetary compensation ($35.00) for participation with a chance to win a VCR when all assessments were completed was offered. The second group was called the New Year's resolution group and only included smokers who decided to quit smoking either at the start of the year or in August and June of different years. Subjects that had already started the quitting process when contacting the organisation were excluded. At 6-month follow-up those subjects who claimed abstinence provided biochemical samples. Results demonstrated that participants were highly motivated to quit. The demographic and smoking history characteristics of both samples were quite similar. 16.2% of booklet recipients and 20.2% of the New Year's resolution group were abstinent at 12 months, but only 0.7% of the booklet group and 5.5% of the New Year's resolution group had continuous abstinence. In looking at the predictors for outcome confidence (self-efficacy) was related to 24-h quitting only. The number of cigarettes smoked per day at baseline was significantly related to quitting, the nicotine content of the cigarette smoked was related to abstinence at 1 month, and withdrawal symptoms reported at 1 month were related to quitting at 1 month as well. Cravings were another important factors and had a relation to quitting smoking at 1 month. The study concluded that there were only a few predictors of successful and unsuccessful smoking including the differentiation between lighter and heavier smokers and the baseline smoking rate and scales from Horn-Waingrow.

2.6.3. Brand Switching

McGovern & Lando (1991) compared 2 methods of nicotine fading as a smoking

cessation preparation technique: a brand switching procedure and a 3-stage set of graduated filters. Subjects had to be smoking 15 or more cigarettes containing at least 0.4 mg of nicotine each a day. Subjects participated in 16 sessions over a 9-week period, including 3 weeks of preparation for quitting and 6 weeks for maintenance. Brands were switched on a 30-50-80 weekly reduction schedule in the first group and filters reducing nicotine levels by 30,50 and 80% were used in the second group. Assessment was supported by carbon monoxide and salvia samples during the first 3 weeks. Self-efficacy assessments and baseline measure were used as well.

Follow-ups were conducted at 3 months and 1-year intervals. Outcome data show 49% abstinence in nicotine faders and 40 % abstinence in brand switchers at 3-month follow-up. These abstinence levels dropped to 22% in nicotine faders and 19 % in brand switchers at the 1-year follow-up for continuous abstinence, but still indicate that both methods led to meaningful reductions in nicotine exposure. The study also shows an impressive gain in self-efficacy across conditions between baseline and quit-date measurements.

However McGovern & Lando (1991) did not have a control group and did not use biochemical validation for differences between the two groups. The results demonstrate that instead of changing brand, nicotine filters could be used to achieve the same results. The only criticism was that those filters gradually accumulated tar deposits, making puffing very hard. The filters also became dirty over the 3-week period.

2.6.4. Withdrawal Management

West et al. (1989) attempted to use the severity of withdrawal symptoms as a predictor of outcome of an attempt to quit smoking. 227 subjects (73 males and 155 females), who managed at least one week of abstinence participated in the research. Subjects had to rate their withdrawal symptoms on a weekly basis using a questionnaire with eight items relating to mood and physical symptoms. All subjects were offered nicotine gum and 89% of subjects used one or more pieces a day. Results indicate that "subjects who were more depressed at one week, who reported more difficulty not smoking and who reported more time spend with urges to smoke, were more likely to have smoked by the end of the second week" (West et al., 1989, p. 983). Significance of predictors variables decreased over time and by week four, lapsers and abstainers did not show significant differences in the withdrawal items measured. The authors question whether their results give support to the previously unsubstantiated view that "one focus of treatment aimed at helping smokers to quit should be the relief of withdrawal symptoms" (West et al., 1989, p. 984). The authors point out that the sample is not representative, because clinic clients tend to be heavier smokers and more dependent than the average population. The use of nicotine gum, diminishing withdrawals has also to be taken into consideration as a possible bias of outcomes, because it reduces withdrawal symptoms.

2.6.5. Stimulus Control

Lyons (1991) discussed stimulus control and cessation of smoking. He pointed out that environmental cues could elicit reports of craving, urges, expectation of pleasure and physiological activation. Emphasis is placed on the fact that stimulus factors are important aspects in the development and maintenance of substance use, including tobacco. Pomerlau (1981) and Lichtensten (1982) report that stimulus control techniques are rarely identified as a major component of treatment and when considered are usually seen as conceptually sound, but empirically unproven.

Lyons (1991) pointed out that stimulus factors that are involved with the purchase of

a tobacco product include peer pressure, parental smoking, social acceptance, and media presentation. He concludes that removal from drug associated environment during treatment may improve immediate results, but follows Marlatt (1985) and Grabowski (1986) in their recommendation that treatment should continue in the normal environment as a means of decreasing the likelihood of relapse.

2.6.6. Aversive Procedures

Hill (1988) used an adversely smoked cigarette, an adverse imaginal relapse rehearsal or abstinence training to examine whether prescribing aversive relapse enhances non-smoking treatment gains. 60 subjects participated, 23 being male, 37 being female. 56 subjects were abstinent at the 72-hour follow-up and participated in 1, 8, 24 and 52-week follow-ups. Results demonstrated that no significant differences were found between the three groups. Although the in vivo group at one year follow-up showed almost double the abstinence quit rate compared to the training condition (40% versus 22%) and more than double the quit rate of the imaginal relapse group (40% versus 11%), it has to be taken into consideration that the numbers were very small. Although the number of subjects was very small and the differences have not been found significant Marlatt & Gordon (1980) suggest that "prescribed relapse" should be included in relapse prevention to diffuse positive expectation associated with a slip.

2.6.7. Social Support

Pirie et al. (1997) included social support into a community-wide smoking-cessation contest. The authors report that social support has been identified as a key factor. In a contest called "Quit and Win" 734 adults signed up by themselves or with a support person. The smoking status of contestants was assessed by self-report and via telephone interviews 3-4 months after the competition. At the 3-month follow-up 34.8% of the individuals who signed up with a support person were not smoking compared to 27.4% of subjects who signed up by themselves. The presence of a

support person was particularly important for those participants who have a smoking spouse. The study appears to be limited because subjects were not randomly assigned to groups, but selected them as an option. That means that the favourable outcome for subjects in the support condition might be attributable to selection bias. The findings suggest that the addition of a support person affect smoking cessation and should be considered particularly for those whose spouses smoke.

2.6.8. Stress Management

Weinrich et al. (1996) examined psychological correlates of adolescent smoking in response to stress. In fall 1991 trained interviewers administered questionnaires to students, the majority being 15 to 16 years of age. 19% of the subjects reported having smoked in response to stress. In general those students had higher anger control scores. More white students reported smoking under stress than black students. Adolescents who received economic support for lunch tended to have a lower rate of smoking. However this finding has to be interpreted carefully, because adolescents who receive economic support might have insufficient funds to afford cigarettes on a regular basis which might have biased the results. The study findings are congruent with those of Perry et al. (1980) and Brink et al. (1988) and suggest that coping skills have to be improved to prevent the onset of smoking under stress.

2.6.9. Exercise

Marcus et al. (1995) examined effects of physical exercise on relapse prevention in 20 previously sedentary female smokers. The length of smoking treatment ranged from 8 to 12 sessions. Women were randomly assigned to a smoking cessation program plus ergometer exercise or to smoking cessation plus control contact. Results indicated that there were no baseline differences. The 24-hour quit rate was 80% for subjects in the exercise group and 90% for subjects in the control group. However more of the exercise subjects maintained their abstinence. Differences in the 7-day abstinence rate during smoking cessation treatment were nonsignificant. After a 12-month

follow-up Marcus et al. (1995) concluded that physical activity does not lead to an increased rate of smoking cessation when compared to a control contact condition. Although the results show no significant differences Marlatt & Gordon (1985) suggest that exercise can serve as a substitute behaviour for smoking cessation. Exercise might reduce both women's fear of and actual post-cessation weight gain. Sinyor et al. (1983) as well as Hughes (1984) point out that physiological and psychological responses to stress might be decreased as well when exercise is used.

2.6.10. Relapse Prevention

Becona & Vazquez (1997) investigated whether relapse prevention increases the efficacy of a program for smoking cessation. Both groups underwent a behavioral multicomponent program. The second group was exposed to relapse prevention as a problem solving procedure. Relapse prevention included problem orientation, problem definition, generation of alternative solutions, decision making and solution implementation. Results indicated that there were no baseline differences and no significant differences in the 6- and 12-month folllow-up between the two groups. Both groups differed significantly from the control group. The authors indicate that the high rate of relapse (55.9% in behavioral multi-component group and 36.4% in relapse prevention group) following initial smoking cessation suggests that a shift of attention from prevention of relapse to management of relapse is desirable.

2.7. Nicotine Replacement Strategies

The pharmalogical aids available to assist smokers to quit fall into two types: those that attempt to reduce the withdrawal symptoms by nicotine replacement, and those that exert their effects through other mechanism.

2.7.1. Nicotine Chewing Gum

Jensen et al. (1991) supported a group of 211, 203 and 92 subjects with nicotine, silver acetate and ordinary chewing gum. Subjects used nicotine and ordinary

chewing gum without restriction for 6 weeks and gradually reduced the consumprion of all three types between week 7 and 12. The results show no significant differences between treatment groups at baseline. When treatment was terminated the abstainer rate in participants with low cigarette consumption was higher in the silver acetate group compared to the two other groups. In persons with high cigarette consumption, abstainer rate was higher in the nicotine group compared to the silver acetate group. Therefore the authors suggest that the weighted packyears consumption should be taken into consideration when recommending nicotine replacement strategies.

2.7.2. Transdermal Nicotine Patches

Perng et al. (1998) conducted a randomized, double-blind, placebo controlled study using the Exodus 30 mg nicotine patch. The patch therapy was given for 6 weeks with 7 follow-up visits. The study included 48 men and 14 women, 30 of them received a transdermal nicotine patch and another 32 received a placebo patch. Nineteen participatnts in the transdermal nicotine patch group and 11 participants receiving the placebo patch successfully stopped smoking at the end of the 6-week trial. Follow-ups were conducted after 6 weeks, 6 months and 12 months. 30% of the volunteers remained abstinent 1 year after the trial. This abstinence rate is higher when compared with about 20% abstinence in research conducted by Lin (1996). The results of the study have to be seen as limited because outcomes were not verified by CO measurements in the follow-up period and the authors relied solely on self-reports. The study concludes that the use of transdermal nicotine patches for 6 weeks in a smoking cessation program raised the smoking cessation rate without serious side effects.

2.8. Acupuncture

Although acupuncture is not performed by psychologists (in most countries) it is mentioned in a number of studies as a means of smoking cessation and has been caried out since the early 1970s.

He et al. (1997) examined the effects of acupuncture on smoking reduction and possibly also smoking cessation. 46 subjects who had smoked for at least 5 years were randomly devided into two groups: a test group and a control group. There were no differences in the tabacco cumsumption between the two groups. Results indicated that both examined acupuncture treatments (test and sham acupoints) can reduce the daily tobacco consumption. Nearly 30% of subjects in the target group reported that they had quit smoking while none of the control group subjects reported abstinence. Follow-ups were not conducted which does not allow conclusions in relation to relapse and makes comparisons impossible.

2.9. Multi-modal, Non-Hypnotic Cessation Strategies

Bliss et. al (1989) examined the influence of situational characteristics and coping on the outcome of a relapse crisis. They found that a correlation between coping and abstinence exists, that means that an increased number of coping strategies was related to an increased likelihood of abstinence. They pointed out that active coping was marginally related to higher baseline levels of motivation to quit. However they also pointed out that there was no difference in outcome between subjects who used multiple behavioural or multiple cognitive strategies and subjects who combined cognitive and behavioural strategies.

Hügel et al. (1992) worked on a similar study examining the efficiency of cognitive and behavioural relapse prevention strategies in conjunction with transdermal nicotine substitution. They found that the application of the relapse prevention strategies used in the study provided no significant increase in the long-term effectiveness of smoking cessation therapy. The abstinence rates showed a marked decrease in all test groups in a 6-months follow-up. The authors assume that the somewhat negative long-term effects of relapse prevention strategies may be due to the way they were applied in other smoking cessation courses. They also pointed out that an excess of intervention is rather harmful than beneficial, because offering booster session might give the ex-smoker the impression that he or she is not

considered capable in principle of abstaining from smoking.

Ginsberg et al. (1991) implemented a treatment program combining nicotine gum, relapse prevention strategies, and partner support training. They found that two types of interactions between smokers and their support partners hinder quitting smoking: "The first is a dependent style in which (1) smokers rely on a support provider to encourage or enforce abstinence or (2) support providers assume responsibility for smoker's quitting efforts" (Ginsberg et al; 1991, p.200). A generalisation of these results can only be limited because of the fairly small sample size (n=21). Other subject criteria that were untypical of all smokers were: treatment participation, college education, low minority representation and the presence of a spouse or close friend.

Oldenburg & Pope (1990) reviewed the determinants of smoking cessation and concluded that beside the social aspect mentioned before other determinants include environmental, biological, personal, demographic and smoking-related factors. They concluded that the type of intervention strategy that will be most effective would vary across the different stages of the change process.

Hall et al. (1990) concluded when discussing the state of the art of behavioural and pharmacological treatments for tobacco dependence that despite the development of transnormal nicotine patches, behavioural treatments "will continue to be useful for those who want to be treated without drugs or who cannot be treated with drugs for medical reasons" (Hall et. al, 1990, p. 111). They also point out that there is still a lack in both behavioural and pharmacological treatments addressing subpopulations such as smokers who experience troubling weight gains after quitting, or those who need alternative ways of regulating the dysphoric affect.

McMahon et al. (1994) focused his research on self-help manuals with and without the expectation of incentives as well as in combination with support groups, and cognitive-behavioural strategies. The results demonstrated that participants who received cognitive-behavioural clinics and social support had significantly higher quit rates and perceived more control over their stressors than members of other groups.

One of the limitations therefore can be seen in the difficulty of assessing the relative contribution of social support and cognitive-behavioural techniques, since both are provided in a group condition. Participants who quit smoking were also found to use more problem-focused coping strategies and fewer emotion-focused coping strategies than participants who did not quit. It was not taken into consideration that techniques might vary in effectiveness depending on the stressor.

Tiffany & Cepeda-Bennito (1994) conducted a meta-analytic study investigating the effects of nicotine replacement treatments in combination with comprehensive treatment programs. Its maximum benefit and therefore an improvement in long-term success of treatments for chronic smokers is achieved in conjunction with behavioural interventions. It was pointed out that it seemed difficult to compare behavioural treatment techniques because they include a variety of aversive and self-management techniques and within the last 15 years are also influenced by social-cognitive and cognitive-behavioural perspectives.

Cinciripini et al. (1994) evaluated a multi-component treatment program involving scheduled smoking and relapse prevention procedures. The study compared the long-term cessation rates of groups exposed to scheduled smoking and relapse prevention procedures to a minimal contact self-help treatment control group. They concluded that the scheduled smoking and relapse program produces higher cessation rates in comparison to the control group. The research design demonstrated an initial test of treatment efficacy for interval smoking. The authors pointed out that scheduled smoking might be a useful addition to a multi-component treatment program. Since the study only assumed compliance through self reported measures and smoking lots it has to be pointed out that additional measures could have been included to assess compliance and nicotine withdrawals. The results indicated that after a 12 month follow-up 41% of subjects abstained from smoking after having participated in a scheduled smoking program. It can be concluded that the results of this scheduled smoking programs compared favourably with the success rates of cessation programs combining aversive procedures.

Salkovcskis & Reynolds (1994) explored the influence of thought suppression on smoking cessation. They concluded that based on the untested assumption that intrusive thought s of smoking play some role in a chain of events which leads to having cigarette, the use of specific instructions in how to divert attention from smoking-related thoughts appears to be effective in smoking-related intrusive thoughts and should be included in a multi-dimensional program for individuals who find such thoughts an obstacle to smoking cessation.

Borelli & Mermelstein (1994) examined the role of self-efficacy, motivation, and stress in subgoal setting and achievement in a smoking cessation program. They also used these variables in predicting abstinence. They further examined the type of subgoal achieved and its relationship to abstinence. Subjects participated in seven weekly group meetings. There was no indication given about the content of the meeting and the procedures applied. Self-report measures have been used for motivation, subgoal achievement and self-efficacy. Smoking status was assessed through telephone calls and verified through both expired carbon monoxide and salvia noting. The findings indicate that practitioners should encourage their clients to set specific and challenging subgoals in order to promote future subgoal setting to abstain from smoking. This procedure is especially important for abstainers, "since their high levels of self-efficacy may lead them to believe that they no longer need to practice coping skills" (Borrelli & Mermelstein, 1994, p. 82). The study 's limitations can be seen in the use of single item measures that might have lowered reliability as well as subgoal setting that might have been driven by the counsellor and not the subject.

Zimmer et al (1993) describes the Freiburger Raucherentwöhnungsprogram with a 3 to 54 months follow-up. They describe two treatment groups and a control group. The control group received "mail therapy" including information letters and 5 "therapy letters". The content of these letters is not discussed. The treatment groups and differed between 6 session (1 hour/session per week-BG2) and 12 sessions (1 hour/session twice per week-BG3). Zimmer et al. (1993) describes the measurements used in details but fails to describe the therapeutic approach with the exception that

it is a group approach. The study clearly demonstrates that at 54 months follow-up that 44,4% in BG2 and 38,8% in BG2 abstained from smoking. The study has to be criticised in relation to internal validity. Subjects have not been randomised to treatments because of organisational problems. There was no biochemical verification of self-reported statements in relation to smoking abstinence.

Schmitz et al. (1993) evaluated the role of cognitive-affective factors influencing smoking outcome at the level of daily coping behaviour. The authors pointed out that quitters were more likely to attribute their coping success to more internal, stable, controllable factors and to report higher self-efficacy than were smokers. Those findings suggest that cognitive-affective mechanisms, analogous to the abstinence violation affect, actively support maintaining abstinence following successful coping. It is important to notice that interpretation of results in the study is limited to self-reported measures in relation to attribution and self-efficacy and can be influenced by biases. Schmitz et al. (1993) used author-constructed instruments that might have shortcomings. The follow-up period was limited to two months and the sample size after dropouts only included 26 subjects. The cognitive-behavioural approach was not described in detail, some of the techniques such as self-monitoring and coping skills training have been mentioned, but no treatment manuals have been used.

Lerman et al. (1997) conducted a study researching the short-term impacts of incorporating biomarker feedback about exposure and genetic susceptibility into minimal-contact quit smoking counselling. They found no significant effects of the interventions on quitting behaviour. They reported that about three fourth of the participants attempted to quit and more than 50% refrained from smoking for more than 24 hours, but only 15% of participants reported that they had abstained from smoking forthe following 7 days.

Shadel et al. (1996) explored self-concept changes over time in CBT treatment for smoking cessation. On the basis that smokers and abstainers show individual differences in their self-concept they examined and found that both a smoker self-concept and an abstainer self-concept appeared to change as a function of standard

CBT. An increase in the abstainer's self-concept score over time suggests that more experience as a non-smoker may come to define further the self-concept. The research can be criticised for a lack of control group, with which finding can be compared. The research suggests that treatment should be designed more specifically to target these self-concept constructs, to implement change more directly and rapidly.

Cinciripini et al. (1995) divided one hundred smokers into high and low trait anxiety groups of the basis of a normalised score on the Profile of Mood States Anxiety/Tension Scale and assigned them randomly to a cognitive behavioural intervention group including Buspirone or a placebo group. The outcome indicated that Buspirone had a beneficial effect on abstinence, but only "among smokers who were already relatively high in anxiety and only for as long as the drug was available" (Cinciripini et al.,1995, p. 189). However, any advantage associated with the administration of the drug waned as it was withdrawn. It became evident that abstinence rates did not differ between Buspirone and placebo conditions or within the anxiety categories after the 3-month follow-up. However the authors pointed out that BHA (Buspirone/High Anxiety) smokers were abstinent significantly less often and showed higher levels of nicotine exposure that did the PLA (Placebo/Low Anxiety) group at 1-year point. The outcome leads to the conclusion that it is important to consider pharmacological intervention for some form of dysphoric mood, because such conditions may be exacerbated by the very process of cessation and may adversely effect cessation outcome.

Jason et al. (1995) assessed a smoking intervention involving groups, incentives, and self-help manuals. They evaluated a media-based worksite smoking cessation program. They selected 18 project directors to lead groups after having finished a three session training program. Results indicated that a combination of social support, cognitive behavioural skills, and incentives resulted in higher quit rates than incentives or self-help manuals at 12 months following initial quitting efforts. Although the effects of group diminish over time it is important to examine the cost-

effectiveness of such an intervention. The authors report that group interventions in a work-site program are much more expensive ($ 26,867) than Self-help ($4,717) or Incentive programs ($6,992). These figures point out that media intervention and self-help groups represent cost-effective methods, but multi-component intervention following initial cessation efforts, training in cognitive behavioural techniques may enhance the rate of abstinences and participation.

Brandon et. al (1995) researched the influence of programs therapeutic messages as a smoking treatment adjusts as well as the reduction of negative affect. A standardised cognitive behavioural treatment alone or in conjunction with 2-month use of a tape player was provided to all participants. Results showed that the use of the hand-held, computer controlled audio player (DT) demonstrated no improvement in treatment outcome. However for participants who have used the DT, the frequency of use acted as a predictor for the use of coping skills posttreatment. The authors tried to explain the absence of differences by pointing to the high success rate in both groups as a practical ceiling effect.

Hall et al. (1998) used a 2 (Nortriptaline vs placebo) X 2(CBT vs control) X 2 (history of major depressive disorder vs no history) to research the effect of Nortriptaline and CBT in the treatment of smoking. The drug was dispensed from week one to week 12 with a quit date being set at week 5 and CBT starting from week 4 to week 12. In the active drug condition 24% of the participants achieved continuous abstinence, in the placebo drug condition, 12 % achieved continuous abstinence. The outcome data suggest that Nortriptaline is a useful adjunct to smoking cessation effort.

Campbell et al. (1998) investigated factors that facilitate implementation of nicotine dependence treatment in a chemical dependence program. The project included for groups: staff education, staff training to conduct nicotine dependence treatment groups, voluntary smoking cessation treatment for smoking staff and smoking cessation treatment for client volunteers in outpatient and residential chemical dependence program. Similar formats for treatment programs have been used for staff and clients. The treatment program consisted of 11 group sessions held over an

approximately 12-week period. Booster phone calls and individual appointment were added on an as needs basis. Session focused the quitting process, reasons to quit and relapse prevention. Treatment included the use of transdermal nicotine patches over a period of 10 weeks. Results demonstrated that 7 out of 40 clients completed the 12-week program, but only 3 clients (7.5%) were completely and continuously abstinent from smoking. The study showed a high dropout rate, which was explained by the fact, that subject who relapsed to smoking tended to drop out of the program. It was assumed that staff smoking also presents a barrier to successful incorporation of smoking cessation treatment.

Walsh et al. (1997) conducted a randomised trial and evaluated the impact of smoking cessation interventions on point prevalence and consecutive quit rates in an Australian prenatal clinic. Smoking status was assessed via self-reports and urine cotinine tests. Subjects were assigned to an experimental or control group. Control group subjects were given a risk pamphlet for women, a two-page cessation guide and were informed about smoking being an important cause for pregnancy problems. The experimental program group underwent 2 to 3 minute of standardised risk information given by the doctor, a 14-minute videotape including risk information, rebuttal of barriers to quitting and cessation tips. This was followed by 10 minutes of standardised information and counselling by midwives and the distribution of a self-help manual. Subjects were informed that all biochemically-validated abstainers at the second visit would be eligible for a lottery. Where practically social support was encouraged and an adult accompanying the patient was invited to participate in the program. Smoking status was assessed 4 weeks after the first visit, during the 34th week (end of pregnancy) and at 6 to 12 weeks postpartum. "Except for the postpartum self report, self-report and biochemically validated quit rates in the experimental group were significantly higher than the control group at all three points" (Walsh, R.A. et al, 1997, p. 1202). The study points out that the 9% validated consecutive smoking cessation rate difference achieved at the end of the pregnancy observation was similar to that achieved by programs delivered by health educators.

Walsh et al. (1997) conclude that experimental programs are required to encourage sustained cessation taking into consideration the cost of the program (US$14) which compares favourably with break evens estimates by several other authors.

2.10. Multi-modal Hypnotic Cessation Strategies

Valbo & Eide (1996) assessed hypnosis as an intervention methods in smoking cessation and reduction among 138 pregnant females in a Norway hospital. During a routine ultrasound examination around the 18th week of pregnancy information on smoking habits such as daily cigarette consumption, total smoking period, motivation to quit and assumed difficulty in quitting, age, education level, and partner's smoking habit were assessed by a questionnaire. All women who were smokers were invited to participate in the hypnosis program. Randomization occurred by drawing lots to quality for to the intervention or control group. Two weeks after the ultrasound examination the intervention participants received an appointment with the hypnotist. 52 women participated in the intervention group. Intervention included two sessions with a two-week interval. "Conventional induction to a superficial nonsomnabulistic stage of trance was given similar to Crasilneck's recommendations" (Valbo & Eide, 1996, p. 30). A tape was used emphasising on their wish to quit and pointing out unpleasant effects of smoking. Encouragement to quit was given and subjects were instructed to use relaxation techniques and self-hypnosis to counteract cravings. The tape had a duration of 15 minutes and counting back from 10 to 1 terminated trance. In the second session the hypnotic procedure was repeated using a second tape. Emphasis was put on phrasing the "message" in a different way and pointing out the subject's possibility of taking control over their cigarette smoking. No other CBT techniques apart from relaxation strategies were applied. The control group demonstrated a 10 % quit rate. 78 women were randomised to that group. Results demonstrate that if the dropouts (15 women) are included in the intervention group the 8% quit rate would still not be a significant difference compared to the control group. The frequency of smoking reduction showed no significant difference

between the two groups either. It was concluded that no effects were observed in this randomised-controlled study using group hypnosis as intervention among pregnant smokers. The authors try to explain the difference between results that demonstrate high cessation rates such as Crasilneck (1990) who reported up to 96% abstinence and their own study by pointing out that selection of participants plays a major role. They assume that in other studies, participants are most often patients who have sought the therapy by their own initiative, often motivated by the health threatening condition of smoking. The study can be criticised for not taking the level of hypnotisability into consideration. However the authors argue that hypnotisability does not play a role in the treatment of addiction and habit disorder.

Spanos et al (1995) administered a free smoking cessation program and compared multi-component hypnotic and non-hypnotic treatment. 54 subjects were randomly assigned to one of four conditions, a 2 session multi-component hypnotic treatment, a 2 session multi-component non-hypnotic treatment, a 2 session psychological placebo treatment, or no treatment at all (controls). For subjects with hypnotic condition a 10-min hypnotic induction procedure modified from Barber 1969) was administered before each session followed by a modification of the Spiegel (1970) message. This was followed by a procedure by Crasilneck and Hall (1985). Th goal was to enhance expectations of the therapeutic process followed by ego-enhancing suggestions from Hartland (1971). The second session reviewed the main point of Spiegel's message. Imaginary scenarios from Watkins (1976) were used to aid smoking cessation. Before termination a modified version of the Stanton's (1978) treatment followed by "wake up" instructions was administered. The nonhypnotic treatment differed from the hypnotic treatment in the way that no references to hypnosis were made and no hypnotic induction procedure was administered. The placebo treatment group was informed that subliminal message could reduce their urge to smoke by bypassing conscious criticism and directly influencing the unconscious mind. They were informed that their treatment would involve listening to music that contained subliminal messages aimed at reducing their craving for cigarettes. Control group

participants were asked to monitor and record their cigarette consumption with the aim of receiving treatment after the 3 months period. Results showed that 9 subjects dropped out between the first and the second session. The study demonstrated hypnotic and nonhypnotic treatments showed a significant but transient decrease in the number of cigarettes smokes. By the 2-month interval both treatment condition participants had returned to their baseline level of smoking. Authors suggest that success might be dependent on whether subjects are required to pay for their treatment. They assume that this and other procedures might filter out subjects who are not motivated enough to undergo "sacrifices" in order to stop smoking. They further elaborate that in studies that report relatively high abstinence rates, subjects have explicitly chosen hypnotic treatment (Spiegel, 1970). They indicate that whether a subject is randomly assigned to a treatment condition that he/she may or may not view as optimal, might influence treatment outcome as well.

Johnson & Karkut (1994) conducted a field study of 93 male and 93 female outpatients examining the facilitation of smoking cessation by combining hypnosis and aversion treatment. After an initial interview with a clinician in which dangers and risks of smoking were explained and the program was described the participants underwent 5 treatment sessions. An aversion procedure lasting 20 minutes, including shocks from a portable electric shocks device was administered in the first session. Rapid smoking was used as well as suggestions making the cigarette rotten, sickening, smell, taste and look disgusting. Sessions 2 to 5 had the same content expect for rapid smoking. After each aversive session hypnosis was used administering a standard induction. In session 2 to 5 self-hypnosis instructions were added to the induction. After session 5 subjects were given a 90 Min audiocassette and asked to listen to the tape every day for one week and as desired thereafter not depending on whether they would attend the sixth session or not. In session 6 the program components were reviewed including the use of the tape and subjects were encouraged to continue smoking cessation. The study showed a 92% abstinence rate following the 2-week program in males. 86% continued to be abstinent at 3-month follow-up. 90% of all

females reported having ceased smoking at program completion and 87% reported abstinence at 3-month follow-up. The study can be criticised for not providing a 6-month or 12-month follow-up. The study did not include a control group and there was no blind evaluation. Initial assessment and treatment was carried out by the same clinician. It has to be pointed out as well that reported smoking cessation rates have not been validated by urine analysis.

Spiegel et al. (1993) examined the relation of smoking and medical history, social support, and hypnotisability to outcome of a smoking cessation program. Hypnosis is often referred as a treatment, but Spiegel & Spiegel (1978) refer to it as a state of receptive, attentive concentration and as Frischholz and Spiegel (1983) point out it facilitates adherence to a primary treatment strategy, but is not in and of itself a treatment. They used a group of 226 outpatients who were referred by their families, friends or physicians. Costs of treatment were $150 and the duration of the session was 50 Min. The quit rate after the first week was 52%, which dropped to 38% by three months and to 30% by 6 months. The abstinence rate was 25% at 1-year follow-up. The authors report that the posttreatment rate of relapse was congruent with those of other single-session habit restructuring procedures that used the strict criterion of abstinence and counted nonresponders as recidivists.

Spiegel et al. (1993) mentioned that these result were congruent with those obtained through Clonidine treatment but much better than a treatment that focused behavioural intervention without a drug. The study highlights the importance of studying patients' characteristics that moderate response to treatment. They conclude that self-hypnosis as a restructuring intervention has to be supported when individuals are highly hypnotisable and have an intact social support network.Spanos et al. (1992-1993) compared hypnotic and nonhypnotic treatments by administering variants of Spiegel's (1970) smoking cessation procedure. Subjects were assigned to four treatment conditions and a nontreatment control group. The groups are divided into active and passive hypnotic condition as well as active and passive "cognitive reorientation". Subjects in the active group were asked to focus on and rehearse the

following facts: 1. For their body smoking is a poison, 2. They cannot live without their body and 3. They owe their body respect and protection. Subjects in the passive conditions were told that those thoughts would fill their minds automatically without any effort. The subjects were asked to record their smoking behaviour but refrain from conscious effort to stop smoking, because that would interfere with unconscious processes. Thiocyanate testing was used to confirm subject`s records. All subjects reported significant reductions in smoking across sessions, but there were no differences between the four treatment groups in extent of reported reduction. Follow-ups were conducted from 12 to 24 weeks after the session.

The study therefore does not support the hypothesis that the Spiegel procedure is more effective when administered in a hypnotic rather than in a nonhypnotic context.

A second experiment was conducted by Spanos et al. (1992-1993) were subjects were again assigned to four treatment groups and a no treatment control group. All subjects had to pay a $20 deposit that was refunded after the last follow-up. All treatment groups included the Spiegel message that was given for either one session or four sessions with or without prior hypnotic induction.

For the non-hypnotic treatment the messages had to change to eliminate references to altered states and trance. Compared to the first experiment that included only one session the second experiment included four sessions in one-week intervals. A thioscreen test and self-report questionnaires were issued to record smoking behaviour.

In both experiments all treated subjects reported larger smoking reduction than controls, but the subjects failed to differ in smoking behaviour of the second follow-up. The change in smoking behaviour was not a result of relapse, but of a steady decrease in reported smoking from the first follow-up interval onward by control subjects.

The study can be criticised because the four-session treatment provided in experiment two was only a repetition of the one session treatment and all procedures in the four sessions were always the same. Different result would have been likely if

the multiple session treatment had included a range of different smoking cessation strategies. In experiment 3 Spanos et al. (1992-1993) randomly assigned subjects to a treatment group (hypnotic or nonhypnotic) or to a treatment control condition. Subjects had to record their smoking behaviour for 3 months prior to their session and had to undergo a thioscreen test. On the baseline trial there was no significant difference between the 2 treatment as well as the control group. . Although treatment subjects tended to smoke less than controls at 3 months follow-up, the difference was not of significance. The experiments demonstrated that the abstinence rates associated with the Spiegel treatment were very low. The abstinence rates were similar to those reported by Perry et al. (1979), but were substantially lower than those reported by Rabkin et al. (1984) or Hyman et al. (1986).

It is important to point out that hypnotic and nonhypnotic subjects in all three experiments attained equivalent reduction in smoking behaviour which indicates that hypnotic treatments are no more effective than various nonhypnotic procedures at reducing reductions in smoking.

Holroyd (1991) investigated the uncertain relationship between hypnotisability and smoking treatment outcome. His motivation has arisen by for example Mott (1979) indicating that 100% of high, 44% of medium, and 17% of low hypnotisable patients quit, though the differences were reduced on long term follow-up. He assigned subjects to three treatment conditions costing $250 each. Group 1 was offered four sessions and suggestions were tailored to their needs. If subjects did not quit after session 1, the difficulties were explored in therapy and counselling was added to the hypnotic treatment. The subjects in group 2 signed a contract to reduce premature termination of treatment and treatment costs were $250 and not dependent on whether they stopped smoking or not. Group 3 and group 2 were alike except that subjects in group 3 were asked to stop smoking 24 hours before their appointment. A script was used that had been used successfully before with subjects who abstained 48 hours before treatment (Jeffrey et al 1985). 6 months after treatment subjects were send a letter requesting follow-up information. The research reported a 43%

abstinence rate by the last treatment session without gender differences. A 16% abstinence rate was reported in the 6 months follow-up. The author was unable to support the hypothesis of a relationship between hypnotisability and smoking treatment outcome. The low abstention rate worked against the hypothesis. The study can be criticised because the therapist knew about the hypnotisability level of the client and could have been more pessimistic and less involved with low hypnotisable clients.

Lando (1996) wrote an article reviewing smoking cessation products and programs. Compared to behavioural approaches he wrote that there are few good studies and that the overall results tend to be disappointing. He continued by expressing that hypnosis appears to pose little risk and that some patients may benefit from expectations of successful outcomes.

Haxby (1995) reviewed drug and nondrug interventions including behavioural therapy and hypnosis. The behavioural techniques that he investigated included self-management, aversive conditioning, relapse prevention, and nicotine weaning. In looking at the second hypothesis Schwartz (1992) points out that "relative effectiveness of each intervention is not known, multi-component, multi-session behavioural treatment programs are among the more successful approaches" (Haxby, 1995, p. 270). In relation to hypnosis he stated that according to Schwartz (1992) it is thé most frequently advertised method of smoking cessation, with some advertisements claiming cure rates as high as 95% (Miller et al., 1992).

Reviews done by Schwartz (1992) and Miller et al. (1992) concluded that hypnosis might be useful adjunct to other methods of smoking cessation, but is of limited value in itself. Both also criticise that most published studies to determine the effectiveness of hypnosis are of poor design.

Law & Tang (1995) systematically reviewed the efficacy of interventions intended to help people stop smoking. Law & Tang provide an overview of studies carried out using different smoking cessation procedures. Those mentioned included hypnosis and behaviour modification treatment. Law & Tang (1995) looked at 10 randomised

trials carried out on 646 subjects by Pederson et al. (1975), Fee (1977), Barkley et al. (1977a), MacHovec and Man (1978), Pederson et al. (1979), Pederson et al. (1980), Schubert (1983), Lambe et al. (1986) and Sachs et al. (1993). Law & Tang (1995) concluded that the combined estimate of efficacy of 23% was statistically significant (P<.001). They criticised the results because no trials measured biochemical markers of tobacco smoke intake to confirm verbal claims of having stopped smoking. They concluded that effects are unproven. They also point out that older uncontrolled studies of hypnosis "have often reported high abstinence rates after 6 to 12 months (some exceeding 50%)" (Law & Tang 1995, p. 1937). When comparing these results with their finding on behaviour modification therapy where the combined estimate of efficacy was 2% (0.4%, P=.05) it can be concluded that the findings from the randomised trials "do not support the use of behaviour modification therapy in helping people to stop smoking" (Law & Tang 1995, p. 1939).

Sorensen et al. (1995) investigated the influence of implementing a smoking ban and hypnotherapy on the reduction of smoking at the workplace. Treatments offered included several formats, including a 90-minute seminar, a five-session course, videotape, and community seminars. When talking the conservative approach that excludes nonrespondents from the quitter group, 11 % quit smoking and maintained continuos smoking cessation for 1 year. 71% of all participants selected hypnotherapy. Discussing their research Sorensen et al. (1995) point out that hypnotherapy used in smoking cessation has not received systematic attention in the literature on worksite programs. The current study by Sorensen et al. (1995) does not contribute to efficacy research, because there is no control group and no details given to compare the different approaches used in the worksite program. Therefore no conclusion can be drawn related to efficacy of hypnosis interventions.

3. Discussion

The aim of this review is to discuss the hypothesis that multi-modal hypnotic treatment approaches have higher cessation rates than non-hypnotic multi-modal

treatments and that the application of multi-modal approaches lead to higher smoking cessation rates when compared to uni-modal approaches.

In considering the review of treatment-outcome literature the author has to express some reservations about drawing firm, if any conclusions when contrasting the studies.

Many studies lack randomization, control groups, long-term folow-ups, biochemical checks, double-blind evaluation and other methodological aspects. Subjects who ceased participation were sometimes counted as having relapsed, sometimes not included at all.

Most of the uni-modal approaches mentioned in the literature review belong to the group of cognitive-behavioural treatments and are combined in multi-modal approaches. In using uni-modal and multi-modal approaches a number of factors make conclusions diffcult: the adequacy of the delivery of the procedures is often unclear, differing approaches are often subsumed under the same name, there are generally only a small number of studies on any given procedure, in these studies typically only a small number of subjects is studied and often a technique is compared with a slightly modified version of the same technique and not with the more standard control groups, such as no-treatment or minimal intervention, making the comparison of effectivenss of these techniques difficult in terms of a common standard.

There have been also a large number of well conducted studies of multi-modal interventions which have shown these approaches to be effective. Because of the scant literature on any given component, however, it is difficult to be sure which components, and in what combination, provide the most powerful intervention.

Spiegel et al (1993) point out that the current literature on the effectiveness of smoking cessation interventions that use hypnosis is conflicting and they are so different in relation to how they are conducted (follow-ups, controls, randomization) that they do not warrant listing in a table. These findings were supported by Schwartz (1987) as well as Holroyd (1980).

Schwartz (1987) indicates that rates of quitting in various trials that use hypnosis range from 13% to 64% in individual interventions and a follow-up time of at least 6 months. In general Lando (1996) pointed out that one should be sceptical in evaluating claims of effectiveness. He recommended that programs and product evaluations should be based on a minimum of 6-month preferably 12-month follow-up.

When evaluating the studies included in the review some may represent very misleading figures, because 60% abstinence at end-of treatment could translate into 1-year outcome as low as 5-10 % (Lando 1996). Lando (1996) further concludes that behavioural treatment techniques have facilitated smoking cessation. He point out that intensive multi-component interventions sometimes produce long-term abstinence rates approaching 50%. In a qualitative review Lando (1996) found only little evidence that hypnosis is effective.

Spiegel's (1970) single session approach provides outcomes in the range of 20-35% for long-term abstinence when administered by him. This approach is characterised by strict criteria of total abstinence.

A rate of 40% at a 6-month abstinence is reported by Hyman et al. (1986) for both the hypnotic strategy and the placebo condition.

Williams & Hall (1988) reported an abstinence rate of 45% in a small randomised trial of a single-treatment method.

It was reported by Barabasz et al. (1986) that the results are also dependent on the person administering the treatment. They reported that when a single session intervention was administered by an experienced clinician, 28% of the participants stated that they were abstinent at 12-month follow-up, but when the intervention was conducted by interns, only 13% reported smoking abstinence at 9 month follow-up.

Summarising the advantages of using the single session hypnosis approach developed by Frischholz and Spiegel (1983) as well as Hilgard (1965) they include "ease of compliance with the treatment regimen, 2) control of potential bias in outcome through uniformity of adherence to treatment and reduced dropouts, since

attendance at only one session is required, 3) moderate success at limited cost, 4) popularity with patients, and 5) wide use by numerous investigators and therapists." (Spiegel et al., 1993, p. 1091).

When single session hypnotic intervention as carried out by Spiegel et al. (1993) is compared with drug treatment such as Clonidine which was carried out by Glassmann et al. (1988) results are very similar, but when compared with behavioural treatment such as carried out by Franks et al. (1989) results of single session intervention with hypnosis were superior. When looking at abstinence rates at 12 months follow-up it has to be pointed out that 25% abstinence as achieved by Spiegel et al (1993) is very similar to that in more intensive smoking treatments and interventions such as Leventhal and Claery (1980), Lichtenstein & Brown (1982) and Ockene (1984).

However it has to be pointed out that 25% abstinence rate at 1 year follow-up is much higher than the outcome that smokers achieved who tried quitting on their own.In three experiments by Spanos et al. (1992-1993) treatment subjects tended to smoke less than controls at 3 months follow-up but the difference was not of significance. The experiments demonstrated that the abstinence rates associated with the Spiegel treatment were very low. It is important to point out that hypnotic and nonhypnotic subjects in all three experiments attained equivalent reduction in smoking behaviour which indicates that hypnotic treatments are no more effective than various nonhypnotic procedures at producing reductions in smoking.

Spanos et al. (1992-1993, p. 40) wrote that "these findings are consistent with comparison studies on a wide variety of clinical disorders (headache pain, warts, phobias, obesity) which indicate that hypnotic treatments are no more effective than nonhypnotic ones at producing therapeutic change".

Not only these findings but also Holrold's (1991) statement that longterm-effects of hypnosis-assisted treatments for smoking are difficult to predict when looking at variables such as hypnotisability, number of treatment sessions, need for cigarettes, and gender need to be considered.

The challenge for psychologists and other public health professionals is how to

integrate such approaches with our knowledge of the determinants of successful and unsuccessful quitting, for use in programs conducted in specialised clinics, by health providers in routine care situations, by the mass media, and at the worksite.

It is important when considering the challenge, however, that we do not ignore the social context of smoking and its effects on maintaining abstinence. This context needs to take into account society's view of smoking, and how these views are expressed; for example, smoking control and smoking discouragement practices have become increasingly common over the past 10 years. The role of cigarette manufacturers in advertising and promoting the sale and distribution of tobacco products should not be underestimated as a significant determinant in this context.

This literature review is unable to support or reject the hypothesis discussed earlier but concludes that a meta-analytic study would be able to solve some of the evaluation problems mentioned before.

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